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TRANSMITTAL OF APPEAL BRIEF	Docket No. S3632.0001/P001

In re Application of: Peter Q. Herman

Application No.	Filing Date	Examiner	Group Art Unit
09/773,560-Conf. #7119	February 2, 2001	M. Shaawat	2128

Invention: FLEXOGRAPHIC SIMULATOR AND DIAGNOSTIC SYSTEM

TO THE COMMISSIONER OF PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed: September 23, 2005 .

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Dated: September 23, 2005

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Docket No.: S3632.0001/P001
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Peter Q. Herman

Application No.: 09/773,560	Confirmation No.: 7119
Filed: February 2, 2001	Art Unit: 2128
For: FLEXOGRAPHIC SIMULATOR AND DIAGNOSTIC SYSTEM	Examiner: Mussa Shaawat

APPEAL BRIEF

Board of Patent Appeals and Interferences
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

INTRODUCTORY COMMENTS

This appeal brief is submitted subsequent to appellant's Notice of Appeal from the Examiner to the Board of Patent Appeals and Interferences dated May 23, 2005.

REAL PARTY IN INTEREST

The real party in interest is Sinapse Graphic International.

RELATED APPEALS AND INTERFERENCES

None.

STATUS OF CLAIMS

All claims 1-22 stand rejected and are under appeal.

STATUS OF AMENDMENTS

There are no outstanding amendments filed subsequent to final rejection. Appellant's response after final action dated March 23, 2005 consisted of a request for reconsideration. The subsequent Advisory Action, mailed April 27, 2005, was followed by Appellant's Notice of Appeal.

SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 recites a system 2, 4, 6, 8 (p. 6, lines 12-21, FIG. 1); 12, 14, 16, 17 (p. 6, lines 22-26, FIG. 2) for simulating a flexographic printing process based on user-controlled flexographic printing process parameters. The system includes a set of data bases 28, 30 (p. 7, line 23, FIG. 3) comprising a formal model of flexographic printing that includes flexographic printing process variables, ranges of the flexographic printing process variable values, potential interactions between the flexographic printing process variables, and effects of the potential interactions on a flexographic printing process output. The system also includes a simulator program comprising a dynamic model of the flexographic printing process, and a user interface (mouse 16, keyboard 18) for providing user control of the simulator program.

Claim 13 recites a method of simulating a flexographic printing process based on user-controlled flexographic printing process parameters. The method includes steps of: creating a database containing a formal model of the flexographic printing process (FIG. 3), providing a computerized workstation for accessing the database, accepting input from a user by way of a user interface, and displaying data related to flexographic printing process simulation. The method also includes processing flexographic printing data entered on the workstation using a dynamic flexographic

printing model to generate flexographic printing simulation data, and displaying the flexographic printing simulation data.

Claim 22 recites a system for simulating a flexographic printing operation that includes a database for storing parameters relating to flexographic printing operations and a formal model for relating input data to the database. A user input is provided for interactively eliciting flexographic printing input data from a user. An included simulating system is based on a dynamic flexographic printing model for producing simulated flexographic printing output data based on the formal flexographic printing model. The system also includes a display for presenting the simulated flexographic printing output data to the user.

GROUNDS OF REJECTION TO BE REVIEWED

Appellant respectfully requests review of the following ground of rejection:

Claims 1, 3, 4, 13, 17, and 22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 5,551,011 to Danby et al.

ARGUMENT

1. <u>Danby et al. does not set forth each and every element of claims 1, 13, and 24</u>:

A claim is anticipated "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP § 2131, quoting *Verdegaal Bros v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Danby et al. does not expressly or inherently describe any of the following features set forth in claim 1: "A system for simulating a flexographic printing process based on user-controlled flexographic printing process parameters," and "a set of data bases comprising a formal model of flexographic

printing," the formal model including "flexographic printing process variables," "ranges of the flexographic printing process variable values," "potential interactions between the flexographic printing process variables," and "effects of the potential interactions on a flexographic printing process output." Danby et al. further does not describe, expressly or inherently, "a simulator program comprising a dynamic model of the flexographic printing process."

Danby et al. discloses a system that simulates a process for making printing paper. The system allows a papermaker to make a 'virtual' sheet of printing paper based on user-controlled to papermaking parameters. The papermaker can view an image of the virtual paper sheet and analyze a report on sheet characteristics to evaluate the printing paper prior to actual manufacture.

The appearance of print is a primary characteristic of the printing paper being evaluated by the papermaker. The appearance of print on the virtual paper sheet is generated by a print simulator. The print simulator is a diagnostic tool that allows a papermaker to evaluate the print-appearance characteristic of the virtual paper.

a. <u>The rejection is based on an unreasonable interpretation of the claim</u>:

During patent examination, the pending claims must be "given [their] broadest reasonable interpretation consistent with the specification." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). In the rejection under 35 U.S.C. § 102(b) based on Danby et al., however, the claim is interpreted as if the explicitly-recited term "flexographic printing" has essentially no meaning, or a meaning that is inconsistent with appellant's specification. Reading the limitation "flexographic" in these ways is an expedient that appears to make Danby et al. an anticipation of the claims when it is not.

More specifically, paragraph 6 on page 2 of the Office Action mailed December 23, 2004 purports to explain how Danby et al. anticipates claim 1. Although each feature recited in claim 1 appears to be addressed individually, and with text and figure references, conspicuously absent from the Office Action is the term "flexographic printing," even though the term is explicitly recited eight times in claim 1.

b. <u>The Examiner's claim interpretation is inconsistent with what those of skill would reach</u>:

The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. *In re Cortright,* 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999). In the Advisory Action mailed April 27, 2005 the Examiner asserts that Danby et al. teaches flexographic printing. The term "flexographic printing" has a well-established meaning to those skilled in the related art. "Flexographic printing" is defined by the Commonwealth of Virginia as follows:

> [T]he application of words, designs or pictures by a rubber or elastomeric image carrier in which the image area is raised above the non-image area. <u>http://www.deq.virginia.gov/osba/factsheets/printrot.html</u> September 23, 2005

"Flexography" is defined at About Technology as follows:

> Frequently used for printing on plastic, foil, acetate film, brown paper, and other materials used in packaging, flexography uses flexible printing plates made of rubber or plastic. The inked plates with a slightly raised image are rotated on a cylinder which transfers the image to the substrate. Flexography uses fast-drying inks, is a high-speed print process, can print on many types of absorbent and non-absorbent materials, and can print continuous patterns (such as for giftwrap and wallpaper). <u>http://desktoppub.about.com/cs/printing/g/flexography.htm</u>, September 23, 2005

Although "flexographic printing" is a well-known term of art, the Examiner attempts in the Advisory Action to give the term another definition based on a statement contained in appellant's specification. Thus, the Examiner asserts that "flexographic printing" is "a complicated printing process using flexible plates to transpose an inked image to different substrates." Appellant respectfully submits that Danby et al. fails to disclose flexographic printing under either definition.

In the Advisory Action, the Examiner asserts that "Danby et al. discloses flexible fiber plates to transpose ink onto different fabric" at col. 5, lines 48-60. Appellant respectfully submits that this assertion is based on a mischaracterization. A plain reading of the referenced text in Danby et al. reveals that referenced text discusses papermaking, not flexographic printing. More specifically, the mischaracterized section relates to fibre retention on a forming fabric, and is in no way related to transposing "ink onto different fabrics." Instead, the "fabric" being described is the forming fabric on which a fibrous mat of paper pulp fibres is developed to make the sheet of paper. Danby et al. simulates the papermaking process as virtual paper pulp fibres falling onto the forming fabric. The fibres are retained on the fabric if they are adequately supported by the lines of the forming fabric mesh according to a papermaking mathematical model. Otherwise, the fibres fall through the holes in the mesh and are not retained. Eventually the retained fibres build up to a desired thickness and the 'virtual' paper sheet is completed. Nowhere does Danby et al. set forth a flexographic printing process or any printing process using flexible plates to transpose an inked image to different substrates.

2. <u>The rejection relies on an interpretation contrary to the Danby et al. disclosure</u>:

In an effort to accumulate from Danby et al. each of the features of claim 1, the Examiner utilizes an expedient but incorrect interpretation of Danby et al. Instead

of teaching a papermaking process followed by a printing process as any fair reading would reveal, Danby et al. is interpreted to be teaching only a "printing process." The "printing process" includes steps of both the papermaking process and the printing process.

Even if this interpretation were correct, which it is not, Danby et al. fails as an anticipation because there is no teaching of "flexographic printing," as advanced above. Moreover, the interpretation of Danby et al. as teaching only a printing process ignores, and is at odds with, the plain language of the reference.

Instead of teaching only a printing process, Danby et al. consistently draws distinctions between papermaking and printing. For example, Danby et al. refers to the two processes differently. Also, as described further below, the printing process takes place after the final sheet is formed by the papermaking process. The distinction between papermaking and printing is also seen in the Abstract of Danby et al., which refers separately to the "paper making machine" and the "printing process."

Danby et al. also distinguishes between the "printer" and the "papermaker." The 'printer' is one who can control the mixture and viscosity of the ink. For any given pass through the printing press, however, the ink will remain the same. It is then up to the "papermaker" to modify variables such as stock, fabric, and machine used to achieve uniform density in the paper. See col. 1, line 48 to col. 2, line 16.

Danby et al. sets forth a computerized system for simulating the production of a paper sheet. See col. 2, lines 48-49. The papermaking process utilizes data relating to the actual production of paper. The system is configured to simulate a series of fibres being dropped onto the surface of the fabric to create a fibrous pulp mat. After a

sufficient amount of fibre has been simulated as being dropped onto the fabric to create a fibrous mat, the system will indicate that a final sheet has been completed.

The sheet is completed when it has the desired basis weight as initially inputted by the papermaker. Also see, *inter alia,* col. 2, line 48 to col. 3, line 5, and col. 6, lines 5-11. No data related to printing is utilized[1] prior to *final completion* of the paper sheet. Instead, Danby et al. discloses that the printing process begins once the papermaking process ends.

The papermaking process and the printing process of Danby et al. are separate. The parameters that go into the papermaking process have no impact on the printing process, and vice-versa. Interpreting papermaking variables as "flexographic printing process variables" as the rejection tries to do is contradictory to the plain terms used in Danby et al.

More specifically, in paragraph 6 of the Office Action mailed December 23, 2004, the Examiner asserts that Danby et al. teaches "process variable values" at col. 4, lines 27-31 and 44-45. Col. 4, lines 27-31, however, teach that an extremely sensitive detector determines fibre lengths, and lines 44-45 teach that fibres are configured as ribbon-shaped structures 30-40 microns wide. Fibre lengths and widths are *papermaking* process variable, not "flexographic *printing* process variables" or "ranges of the flexographic *printing* process variable values" as recited in claim 1.

Similarly, in paragraph 6 of the Office Action, the Examiner asserts that Danby et al. teaches "interactions between process variables" at col. 4, lines 51-61. Quoting from the referenced section of Danby et al.:

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[1] The papermaker can input the printing process desired at the start of papermaking, for example, but this information has no utility or relevance to making the final sheet.

> Otherwise, the work station 12 can create, by solid-modeling, a fabric according to the user's specifications. Fabric designs which may be inputted are; single layer, double layer, `X`-pick double layer, triple-layer or any hypothetical design the user can think of. Single layer fabrics produce the coarsest paper sheets with the greatest probability of uneven density due to less fibre retention and due to the knuckles and holes in the fabric. Triple-layer fabrics are most desirable as far as providing a sheet of uniform density and smoothness. Whichever mode and fabric chosen, the input is thus sent to the computer for use in the simulation application.

As is evident, interactions between the *papermaking* process variables of fabric and fabric design are taking place in Danby et al., not "interactions between the <u>flexographic</u> *printing* process variables."

Danby et al. teaches modifying sheet production parameters such as stock, the forming fabric, and the headbox being used to adjust density and distribution of the sheet. Once the parameters are set, the system disclosed by Danby et al. will generate data related to various paper qualities including fibre retention, density, surface characteristics, and structure. These qualities are used to determine whether further modifications in the papermaking production parameters are necessary.

A visual output is produced so that the user can evaluate print appearance. Even though the characteristic being evaluated is "print" appearance, it is the characteristics of the *paper sheet* that are being evaluated and manipulated, and not the characteristics of "a flexographic printing process output."

Moreover, Danby et al. teaches that print appearance relates to the degree of ink penetration and the rate of ink absorption. These parameters, in turn, are determined by the density of the area of the sheet on which the ink falls. The density of the area is controlled by sheetmaking variables including stock, fabric, and machine used.

Regarding the type of printing process, Danby et al. discloses rotogravure, lithogravure, letter, or a hypothetical process. Danby et al. does not disclose flexographic printing. Thus, Danby does not teach "a system for simulating a flexographic printing process based on user-controlled flexographic printing process parameters," or "a set of data bases comprising a formal model of flexographic printing."

Danby et al. also does not teach or suggest a system that includes "potential interactions between the *flexographic* printing process variables," and "effects of the potential interactions on a *flexographic* printing process output." Moreover, Danby et al. contains no motivation to provide a model that accounts for "potential interactions between the flexographic printing process variables" or the "effects of the potential interactions on a flexographic printing process output." Instead, Danby et al. teaches a papermaking simulator concerned with potential interactions between *papermaking* process variables and the effects of potential interactions on a *papermaking* process output.

3. Claim 13 is not anticipated by Danby et al.:

Claim 13 recites a method of simulating a flexographic printing process. The method includes creating a database containing a formal model of the flexographic printing process, and displaying data related to flexographic printing process simulation. As advanced above, Danby et al. is silent as to flexographic printing processes. Claim 13 is not anticipated by Danby et al.

4. Claim 22 is not anticipated by Danby et al.:

Claim 22 recites a system for simulating a flexographic printing operation. The system includes, *inter alia*, a simulating system based on a dynamic flexographic

printing model. Danby et al. does not contain any disclosure of flexographic printing as advanced above with respect to claim 1, and so does not teach a simulating system based on a dynamic flexographic printing model. Claim 22 is not anticipated by Danby et al.

5. Dependent claims 2-12 and 14-21:

Claims 2, 6, 8, 12, 14-16, 18, and 19 stand rejected under 35 U.S.C. § 103(a) on the basis of obviousness over Danby et al. Claims 2, 6, 8, and 12 depend from claim 1, which is not anticipated by Danby et al. as advanced above. Danby et al. has not been asserted against claim 1 under 35 U.S.C. § 103(a). Claim 1 is patentable over Danby et al. Claims 2, 6, 8, and 12 depend directly or indirectly from claim 1, and are patentable over Danby et al. for at least the same reasons. Claims 14-16, 18, and 19 depend from claim 13, which is patentable over Danby et al. as advanced above. Danby et al. has not been asserted against claim 13 under 35 U.S.C. § 103(a). Claim 13 is patentable over Danby et al. Claims 14-16, 18, and 19 depend directly from claim 13 and are patentable over Danby et al. for at least the same reasons.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being obvious over Danby et al. in view of U.S. Pat. No. 4,639,881 to Zingher. Claim 5 depends from claim 1, which is patentable over Danby et al. as advanced above. Zingher has not been asserted against claim 1. Claim 1 is patentable over Danby et al. in view of Zingher. Claim 5 depends indirectly from claim 1 and is patentable over Danby et al. in view of Zingher.

Claims 7 and 20 stand rejected under 35 U.S.C. § 103(a) as being obvious over Danby et al. in view of Zingher, further in view of U.S. Pat. No. 4,733,634 to Karel. Claim 7 depends from claim 1, and claim 20 depends from claim 13, both of which are

patentable over Danby et al. in view of Zingher as advanced above. Karel has not been asserted in any rejection against claim 1 or claim 13.

Claims 9, 10, and 21 stand rejected under 35 U.S.C. § 103(a) as being obvious over Danby et al. in view of Zingher, further in view of Karel, and further in view of U.S. Pat. No. 5,434,961 to Horiuchi. Claims 9 and 10 depend from claim 1, and claim 21 depends from claim 13, both of which are patentable over Danby et al. in view of Zingher, further in view of Karel, as advanced above. Horiuchi has not been asserted in a rejection of claim 1 or claim 13. Claims 1 and 13 are patentable over Danby et al. in view of Zingher, further in view of Karel, further in view of Horiuchi. Claims 9 and 10, which depend directly and indirectly, respectively from claim 1, and claim 21, which depends directly from claim 13, are patentable over Danby et al. in view of Zingher, further in view of Karel, further in view of Horiuchi for at least the same reasons as claims 1 and 13 from which they respectively depend.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Danby et al. in view of Zingher, further in view of Karel, further in view of Horiuchi, and further in view of U.S. Pat. No. 5,027,293 to Pung. Claim 11 depends from claim 1, which is patentable over Danby et al. in view of Zingher, further in view of Karel, further in view of Horiuchi, as advanced above. Pung has not been asserted in any rejection against claim 1. Claim 1 is patentable over Danby et al. in view of Zingher, further in view of Karel, further in view of Horiuchi, and further in view of Pung for at least the same reasons. Claim 11 depends directly from claim 1 and is patentable over Danby et al. in view of Zingher, further in view of Karel, further in view of Horiuchi, and further in view of Pung for at least the same reasons.

CONCLUSION

In view of the above, appellant respectfully submits that the rejections of pending claims 1-22 should be reversed.

Dated: September 23, 2005

Respectfully submitted,

By

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CLAIMS APPENDIX

1. (previously presented) A system for simulating a flexographic printing process based on user-controlled flexographic printing process parameters, the system comprising:

a set of data bases comprising a formal model of flexographic printing including flexographic printing process variables, ranges of the flexographic printing process variable values, potential interactions between the flexographic printing process variables, and effects of the potential interactions on a flexographic printing process output;

a simulator program comprising a dynamic model of the flexographic printing process; and

a user interface for providing user control of the simulator program.

2. (previously presented) The system of claim 1, wherein the user interface simulates a pressroom, including flexographic printing and control systems in the pressroom.

3. (previously presented) The system of claim 1, further comprising a copy desk for reproducing the flexographic printing process output.

4. (previously presented) The system of claim 3, wherein the copy desk comprises a set of software routines for performing image manipulations in order to reproduce printed effects on the flexographic printing process output, including changes in size of dots, dot density, and modifications to a substrate surface.

5. (previously presented) The system of claim 4, wherein the copy desk further comprises printer's diagnostic tools including at least one of a densitometer, a magnifier, and a spectrophotometer.

6. (previously presented) The system of claim 1, further comprising a trainer module for allowing a user to specify sets of materials to be used in the flexographic printing process.

7. (original) The system of claim 6, wherein the user can define production costs applied in the simulator.

8. (previously presented) The system of claim 6, wherein the user can create problem sets which become a curriculum of a flexographic printing training course.

9. (original) The system of claim 1, further comprising a copy generator module that allows users to enter images as simulated production jobs.

10. (previously presented) The system of claim 9, wherein the copy generator module analyzes an image and pre-calculates how certain process faults would look if they were to appear on the image.

11. (previously presented) The system of claim 1, further comprising a diagnostic help system module for presenting the databases to help users troubleshoot flexographic print problems.

12. (previously presented) The system of claim 1, wherein the user interface lets a user verify and act on flexographic printing press and flexographic printing process parameters, the actions and verifications being communicated to the simulator.

13. (previously presented) A method of simulating a flexographic printing process based on user-controlled flexographic printing process parameters, the method comprising the steps of:

creating a database containing a formal model of the flexographic printing process;

providing a computerized workstation for accessing the database, accepting input from a user by way of a user interface, and displaying data related to flexographic printing process simulation;

processing flexographic printing data entered on the workstation using a dynamic flexographic printing model to generate flexographic printing simulation data; and

displaying the flexographic printing simulation data.

14. (original) The method of claim 13, further comprising the step of generating trace files of the process steps.

15. (original) The method of claim 13, further comprising the step of providing user-definable multimedia links to data outside the database.

16. (previously presented) The method of claim 13, wherein the user interface comprises a flexographic printing press console.

17. (original) The method of claim 13, further comprising the step of providing image manipulation screens to the user, including manipulations to "dot" size, density, and substrate surface.

18. (previously presented) The method of claim 13, further comprising the step of simulating flexographic printer diagnostic tools, including densitometers, magnifiers, and spectrophotometers.

19. (previously presented) The method of claim 13, further comprising providing a trainer module for specifying sets of materials and reference values to be used for flexographic printing production runs.

20. (previously presented) The method of claim 13, further comprising calculating flexographic printing production costs.

21. (previously presented) The method of claim 13, further comprising providing a copy generator module into which an image is entered and the image is analyzed to anticipate potential flexographic printing production faults.

22. (previously presented) A system for simulating a flexographic printing operation comprising:

a database for storing parameters relating to flexographic printing operations;

a formal model for relating input data to the database;

a user input for interactively eliciting flexographic printing input data from a user;

a simulating system based on a dynamic flexographic printing model for producing simulated flexographic printing output data based on the formal flexographic printing model; and

a display for presenting the simulated flexographic printing output data to the user.